WHAT IS CLAIMED IS:

1. A nitride semiconductor device having a structure wherein an active layer of a quantum well structure, which has a well layer made of a nitride semiconductor that includes In and a barrier layer made of a nitride semiconductor, is sandwiched between a p-type nitride semiconductor layer and an n-type nitride semiconductor layer,

wherein said active layer has, as said barrier layer, a first barrier layer arranged in a position nearest to said p-type nitride semiconductor layer and a second barrier layer that is different from the first barrier layer;

and wherein said first barrier layer does not substantially include an n-type impurity while said second barrier layer includes an n-type impurity.

2. The nitride semiconductor device according to Claim 1, wherein the film thickness of said first barrier layer is greater than the film thickness of said second barrier layer.

3. The nitride semiconductor device according to Claim 1, wherein said active layer has L ($L \geqq 2$) barrier layers so that the barrier layer arranged in a position nearest to said n-type nitride semiconductor layer is denoted

as barrier layer B1 and the i-th barrier layer (i=1, 2, 3, ...L) counted from the barrier layer B1 toward said p-type nitride semiconductor layer is denoted as barrier layer Bi; and barrier layers Bi from i=1 to i=n (1 < n < L) include an n-type impurity.

4. The nitride semiconductor device according to Claim 1, wherein the entire barrier layers other than said first barrier layer include an n-type impurity.

5. The nitride semiconductor device according to Claim 1, wherein said first barrier layer is arranged in the outermost position in said active layer.

6. The nitride semiconductor device according to Claim 7, wherein said second barrier layer is arranged in the outermost position close to said n-type nitride semiconductor layer within said active layer.

7. The nitride semiconductor device according to Claim 6, wherein the film thickness of said first barrier layer is approximately the same as the film thickness of said second barrier layer.

8. The nitride semiconductor device according to

Claim 7, wherein said active layer has 2 or more well layers and has a third barrier layer between the well layers; and

the film thickness of said third barrier layer is smaller than the film thickness of said first p side barrier layer and said second n side barrier layer.

9. The nitride semiconductor device according to Claim 1, wherein at least one well layer within said active layer has a film thickness of not less than 40 Å.

10. The nitride semiconductor device according to Claim 1, wherein said first barrier layer has a p-type impurity.

11. The nitride semiconductor device according to Claim 1, wherein said first barrier layer includes a p-type impurity in the range of no less than 5×10^{16} cm^{-3} and no more than 1×10^{19} cm^{-3}.

12. The nitride semiconductor device according to Claim 1, wherein said first barrier layer is p-type or i-type.

13. The nitride semiconductor device according to Claim 12, wherein said first barrier layer has been grown without being doped with an impurity and includes a p-type

impurity through diffusion from said p-type nitride semiconductor layer.

14. The nitride semiconductor device according to Claim 1, wherein said n-type nitride semiconductor layer, said active layer and said p-type nitride semiconductor layer are layered in sequence.

15. The nitride semiconductor device according to Claim 1,

wherein said p-type nitride semiconductor layer has an upper clad layer made of a nitride semiconductor that includes Al of which the average mixed crystal ratio x is in the range of $0 < x \leqq 0.05$;

said n-type nitride semiconductor layer has a lower clad layer made of a nitride semiconductor that includes Al of which the average mixed crystal ratio x is in the range of $0 < x \leqq 0.05$; and

the nitride semiconductor device has a laser device structure.

16. The nitride semiconductor device according to Claim 1, wherein said device has a first p-type nitride semiconductor layer adjoining the active layer in said p-type nitride semiconductor layer, and said first p-type nitride

semiconductor layer is made of a nitride semiconductor that includes Al.

17. The nitride semiconductor device according to Claim 16, wherein said first p-type nitride semiconductor layer is provided so as to contact a barrier layer nearest to said p-type nitride semiconductor layer and has been grown being doped with a p-type impurity of which concentration is higher than that of said barrier layer in said active layer.

18. The nitride semiconductor device according to Claim 1, wherein the number of well layers in said active layer is from 1 to 3 .

19. The nitride semiconductor device according to claim 1, in said active layer said second barrier layer is arranged between well layers and the film thickness ratio Rt (= [film thickness of a well layer] / [film thickness of a barrier layer]) of said well layer to the second barrier layer is in the range of $0.5 \leqq Rt \leqq 3$.

20. The nitride semiconductor device according to claim 1, wherein the film thickness dw of said well layer is in the range of $40Å \leqq dw \leqq 100Å$ while the film thickness db of said second barrier layer is in the range of $db \geqq 40$

Å.

21. The nitride semiconductor device according to Claim 1, wherein said p-type nitride semiconductor layer has an upper clad layer made of a nitride semiconductor that includes Al and said n-type nitride semiconductor layer has a lower clad layer made of a nitride semiconductor, wherein the average mixed crystal ratio of Al in the upper clad layer is greater than that of the lower clad layer.

22. The nitride semiconductor device according to Claim 21, wherein the average mixed crystal ratio x of Al in said upper clad layer is in the range of $0 < x \leqq 0.1$.

23. The nitride semiconductor device according to Claim 1,

wherein said p-type nitride semiconductor layer has a first p-type nitride semiconductor layer which contacts said active layer and becomes an electron confining layer;

said active layer has a well layer of which distance dB from the first p-type nitride semiconductor layer is in the range of no less than 100 Å and no more than 400 Å and has a first barrier layer within the distance dB.